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ABSTRACT

In 1987, a study was conducted to estimate the economic impact of the State University of New York's (SUNY's) community colleges on their individual service areas, and, as a system, on the state as a whole. In light of changing economic conditions and fiscal trends, the study was replicated in 1991. The methodological model used in both studies examined three major expenditure components to estimate direct economic impact: college budgetary expenditures, employee expenditures, and student expenditures. Three levels of economic activity were calculated, and an economic multiplier was applied to estimate additional business volume generated from these direct expenditures. The model also included an estimate of the additional jobs created by the economic activity. Major study findings included the following: (1) the SUNY community colleges generated an economic impact on the state that was 8.03 times the aid received from the state, and that accounted for the creation of 42,483 jobs; (2) the direct economic impact of SUNY's community colleges was calculated at $966,028,478, resulting from $299,951,611 in college expenditures; $185,139,151 in student expenditures; and $480,937,716 in employee expenditures; (3) with the application of the multiplier of 2.06, a total business volume or economic impact of $1,990,018,664 was generated by expenditures of SUNY, its students, and employees; and (4) the ratio of total economic impact to total revenues from all sources ($771,959,679) was 2.6 to 1. The survey instrument, a components chart of the economic impact model, and data tables are appended. (PAA)

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ED337239

UPDATE: THE ECONOMIC IMPACT OF SUNY'S COMMUNITY COLLEGES ON THE STATE OF NEW YORK

Spring 1991

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JC 910 487

INTRODUCTION

The mission of the community colleges in New York State is to provide educational opportunities for the citizens of the State, primarily those residing in the respective service areas of the colleges. They offer associate degree programs that encompass the first two years of a baccalaureate education, and occupational and technical programs designed to lead directly into employment for both full-time and part-time students. They address a large variety of learning needs and interests through continuing education programs and targeted courses and services for community agencies and local firms.

The colleges are, by law and operation, truly community colleges since they have local boards of trustees and are partly funded by local tax revenue. They are teaching institutions, serving the widest range of student needs through open admissions and developmental programs. They are committed to access, life-long learning and community service. During the fall 1990, the 30 SUNY community colleges enrolled 192,651 students in credit programs, almost 64% of all lower division students in the SUNY system.

In addition to affordable access to higher education and community services, SUNY community colleges have an economic impact on local communities and as a system, on the State. Economic development is a continuing priority of all segments of state government, and community colleges are active in delivering education and training tailored to the needs of local business and industry. It is also appropriate in this context that community colleges demonstrate their value as an economic entity.

THE STUDY

Three years ago the Center, in cooperation with the Office of Community Colleges, SUNY Central Administration, published a study of economic impact of State University of New York community colleges on their local sponsor areas and on the State of New York. Due to the changing economic conditions and fiscal trends within the State as a whole, an update of the findings was judged useful and appropriate. With Dr. Thomas S. Kubala, Deputy to the Chancellor for Community Colleges, project staff, Dr. Gene M. Winter and Dr. LaVerna M. Fadale of the Two-Year College Development Center, University at Albany, State University of New York, a replication of the 1987 study was done in order to provide current information.

As in the original study, the basic model used was developed by Dr. G. Jeremiah Ryan for determining both local and statewide economic impact estimates of New Jersey's community colleges. Three major expenditure components were used to estimate direct economic impact: college expenditures, employee expenditures, and student expenditures. An economic multiplier was then applied to estimate the additional business volume or indirect economic impact that results from these direct expenditures. Information provided by the New York State Department of Economic Development led to the use of 2.06 as the current multiplier for higher education expenditures in New York State.

The model also included an estimate of the additional jobs created by the economic activity. The U. S. Department of Commerce estimated that currently 30.6 jobs are created for each million dollars of direct expenditure.

MAJOR FINDINGS OF THE STUDY

The SUNY community colleges generated an economic impact in the State:

- that is 8.03 times the aid received from the State
- that accounts for the creation of 42,483 jobs.

The finding of a ratio of economic impact to State aid of 8 to 1 is conservative compared to results of similar studies done in other states. The differences are mainly caused by use of smaller multipliers and consistently conservative estimates. Still the findings clearly demonstrate that the SUNY community colleges can be viewed as an economic entity, one that contributes to economic development much like other segments of the economy.

However, readers must remember that the more important benefits, increased earning power associated with increased levels of education and an improved quality of life, have not been included in this study. Making higher education and technical skill training readily available to all citizens of New York State remains the main job of the community colleges. That they also have a significant economic impact further reinforces the wisdom of public investment in this unique educational system.

ECONOMIC IMPACT ON THE STATE OF NEW YORK

The economic impact of SUNY's community colleges on the economy of New York in 1989-90 was estimated to be:

College Expenditures	$299,951,611
Employee Expenditures	$185,139,151
Student Expenditures	$480,937,716
Direct Economic Impact of SUNY's Community Colleges	**$966,028,478**

Almost $1 billion of the State's economy is a direct result of spending by the SUNY community colleges, their students and their employees, $275 million more than in 1987.

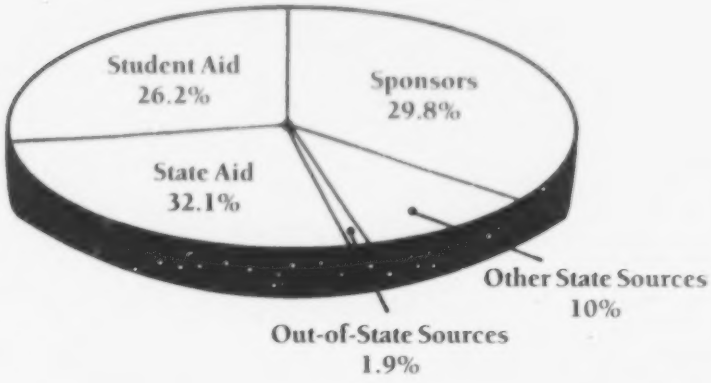
Multiplier:

A factor recommended by the New York State Department of Economic Development and the U.S. Department of Commerce used to account for the additional business volume that results from the respending that occurs following the original expenditure. X 2.06

Total Economic Impact of SUNY's Community Colleges	**$1,990,018,664**

A business volume of nearly $2 billion was generated by the expenditures of SUNY community colleges, their students and their employees.

SUNY Community College Revenues for FY 1989-90 $771,959,679



Most of the support for community colleges comes from three sources: State aid, local sponsor revenue and student tuition. State aid amounted to $247,831,209.

The ratio of statewide impact to State aid $\frac{\$1,990,018,664}{\$\ 247,831,209}$ is 8.03 to 1

$1,990,018,664

State Aid
$247,831,209

42,483 jobs are attributable to SUNY's Community Colleges

The employment opportunities created by the existence of SUNY's community colleges and their expenditures were:

FTE* Existing Jobs	16,092
Estimated Jobs Created in New York State	26,391
TOTAL EMPLOYMENT	42,483

*Full-time equivalent

The employment opportunities created were estimated by using the multiplier of 30.6 for each million dollars of direct economic impact. The estimate was 26,391 jobs created in New York State, added to the 16,092 full-time equivalent jobs already existing in the colleges. The result is nearly 43,000 jobs attributable to SUNY's community colleges in the State. This figure was approximately 1,000 greater than the 1987 findings even though the recommended multiplier decreased markedly (40.1 to 30.6).

LIMITATIONS OF THE STUDY

Any study of this type only provides estimates of the real economic impact that community colleges have on a state. This model does not include some components that others have used, such as expansion of the credit base of local banks due to college-related deposits, expenditures by visitors to college-related events, and college employee investments in real property (home ownership). Nor does the model include State and local taxes paid by employees, increases in sales tax revenues due to college-related expenses, and estimates of tax revenue foregone because of college property being tax-exempt. The exclusions, while overcoming the necessity of local surveys at each college, also insure underestimation of the actual economic impact. The purpose of this study was to show a reasonable and defensible impact of SUNY's community colleges as an economic entity, not to arrive at an optimum estimate of their economic value.

Executive Summary

This project is a replication of a 1987 study that estimated the economic impact of State University of New York community colleges on the State and individual sponsor areas. Multipliers and other basic economic data were adjusted based on updated information from the New York State Department of Economic Development and the U.S. Department of Commerce. Using 1989-90 expenditures from each community college, calculations of each component of the model were performed resulting in the following findings:

- Almost $1 billion of the State's economy was a direct result of spending by SUNY's community colleges, their students and their employees.
- A business volume or economic impact of nearly $2 billion was generated by expenditures of SUNY's community colleges, their students and their employees.
- The ratio of total economic impact to total revenues from all sources was 2.6 to 1.
- The ratio of statewide economic impact to State aid is 8.03 to 1.
- More than 42,000 jobs were attributable to the existence and expenditures of SUNY's community colleges.

The findings clearly demonstrate that SUNY's community colleges can be viewed as an economic entity, one that contributed to economic development much like other segments of the economy. However, it is important to note that the more important benefits, increased earning power associated with increased levels of education, and an improved quality of life, have not been included in this study.

The investment in developing human capital provides the most important return to the citizens of the State. Making higher education and technical skill training readily available to all citizens of New York State remains the main job of the community colleges. That they also have a significant economic impact further reinforces the wisdom of public investment in this unique educational system.

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UPDATE: THE ECONOMIC IMPACT OF SUNY'S COMMUNITY COLLEGES ON THE STATE OF NEW YORK

Introduction

Three years ago the Center, in cooperation with the Office of Community Colleges, SUNY Central Administration, published a study of economic impact of State University of New York community colleges on their local sponsor areas and on the State of New York. Due to the changing economic conditions and fiscal trends within the State as a whole, an update of the findings was judged useful and appropriate. With Dr. Thomas S. Kubala, Deputy to the Chancellor for Community Colleges, project staff, Dr. Gene M. Winter and Dr. LaVerna M. Fadale of the Two-Year College Development Center, University at Albany, State University of New York, a replication of the 1987 study was done in order to provide current information. For more specific details regarding rationale, model components and procedures undertaken, the reader is referred to the original study.[1]

During the fall 1990, the 30 SUNY community colleges enrolled 192,651 students in credit programs, almost 64% of all lower division students in the SUNY system. SUNY community colleges employed more than 19,000 people and had a net operating cost of $672 million dollars, of which 27% was provided by student tuition.[2] In addition to affordable access to higher education and community services, SUNY community colleges have an economic impact on local communities and as a system, on the State. Economic development is a continuing priority of all segments of state government, and community colleges are active in delivering education and training tailored to the needs of local business and industry. It is also appropriate in this context that community colleges demonstrate their value as an economic entity.

Methodology

As in the original study, this replication used data collection instrumentation adapted from New Jersey handbook materials.[3] The questionnaire was mailed to the Presidents of each SUNY community college in December 1990, requesting data from 1989-90 sources. A copy of this instrument constitutes Appendix A. Data were analyzed and statewide publications prepared during February and March.

The basic model used in this replication and the original study was developed by Dr. G. Jeremiah Ryan for determining both local and statewide economic impact estimates of New Jersey's community colleges.[4] It was designed to overcome some of the complexity of the Caffrey and Isaacs procedures, particularly the necessity for local surveys of college employees and students.[5]

Three major expenditure components were used to estimate direct economic impact:

College budgetary expenditures	- operating expenditures (excluding salaries, wages and taxes)
Employee expenditures	- disposable income spent on retail sales and average rental expenditures by non-home owners
Student expenditures	- college-related expenditures excluding tuition and fees

An economic multiplier was applied to each of these streams of economic activity to estimate the additional business volume or indirect economic impact that results from the direct expenditures. A different factor was used to estimate additional jobs created by the economic activity. The model and its components are illustrated in Appendix B.

As in the original study, the average percent of disposable income spent in each county(ies) (sponsor area) was determined by dividing "Total Retail Sales," (non-housing items) by "Effective Buying Income" on a county-by-county basis (TRS ÷ EBI = Non-housing Expenditure). Both data elements were identified in the 1990 Survey of Buying Power in the journal, Sales and Marketing Management.[6] Effective Buying Income was defined as disposable personal income. College employees living in the sponsor county(ies), and in the State, multiplied by the average non-housing percentage derived above, resulted in estimates of non-housing expenditures by employees (Appendix C, Employee Factor Reference Chart).

Housing expenditures by employees who rent were estimated by using census data from the New York State Statistical Yearbook 1989-90 to determine the percentage of renter-occupied housing units and the basis for median contract rent paid in each county.[7] The average 1990 levels of rental costs per county were estimated by applying trend data in Current Housing Reports, 1980 and 1985 (Appendix C) to 1980 census data.[8, 9]

Following the procedures used in the original study, discussions with research staff at the New York State Department of Economic Development confirmed the appropriate current multipliers as 2.06 for State indirect impact and 1.7 for local college indirect impact. Both of the current multipliers are lower, .04 and .1 respectively, than those used in the 1987 study.

A college carries with it the necessity for creating a number of jobs to carry out its functions. In addition, expenditures by the college, its students and employees increase economic activity which, in turn, results in the creation and support of additional jobs. A U.S.

Department of Commerce handbook for regional input-output analysis identifies multipliers for all industries for all states.[10] The Department provided an updated figure of 30.6 new jobs created for each million dollars of expenditure in education and miscellaneous industries in New York State. This figure is 9.5 less than the number used in the 1987 study, a reflection of the changes in the economy.

Limitations of the Study

Any study of this type only provides estimates of the real economic impact that community colleges have on a state. The Ryan-New Jersey model does not include some components that various adaptations of the Caffrey and Isaacs model have used, such as expansion of the credit base of local banks due to college-related deposits, expenditures by visitors to college-related events, and college employee investments in real property (home ownership). Nor does the model include state and local taxes paid by employees, increases in sales tax revenues due to college-related expenses, and estimates of tax revenue foregone because of college property being tax-exempt.

The exclusions, while overcoming the necessity of local surveys at each college, also insure underestimation of the actual economic impact. The purpose of this study is to show a reasonable and defensible impact of the colleges as an economic entity, not to arrive at an optimum estimate of their economic value. It must be remembered that the most important mission of community colleges is to provide education and training to the citizens of the State.

Findings: Economic Impact on the State

Using data provided by the community colleges or from SUNY Central, calculations were made following the model as previously outlined. The economic impact of the SUNY community colleges on the economy of New York State in 1989-90 was estimated to be:

College Expenditures	$299,951,611
Employee Expenditures	$185,139,151
Student Expenditures	$480,937,716
DIRECT ECONOMIC IMPACT OF SUNY COMMUNITY COLLEGES	$966,028,478

Almost $1 billion of the State's economy is a direct result of spending by the SUNY community colleges, their students and their employees. This is $275 million more than in 1987. Student expenditures increased more than $94 million, employee expenditures increased more than $63 million and college expenditures increased about $118 million during the past three years.

The largest component of the direct economic impact was student expenditures which account for nearly 50% of the total. College non-salary expenditures comprised about 31% of the impact and employee expenditures accounted for 19%. The proportions among the three major expenditure components remain similar to the 1987 study.

In order to account for the additional business volume that resulted from respending that occurs following the original expenditure, the multiplier of 2.06 (provided by the New York State Department of Economic Development) was applied to the total direct impact with the following result.

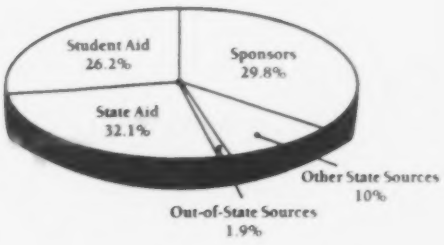
TOTAL ECONOMIC IMPACT OF SUNY COMMUNITY COLLEGES

2.06 X $966,028,478 = $1,990,018,664

A business volume of nearly $2 billion was generated by the expenditures of SUNY community colleges, their students and employees in 1989-90.

Community College Revenues. Most of the support for community colleges comes from three sources: student tuition, State aid and the local sponsor. The amounts and relationships are graphically presented as follows:

Student Tuition	$202,286,263
State Aid	$247,831,209
Sponsor (including Chargeback Revenue)	$229,857,694
Other State Sources	$ 77,473,445
Out-of-State Sources	$ 14,511,068

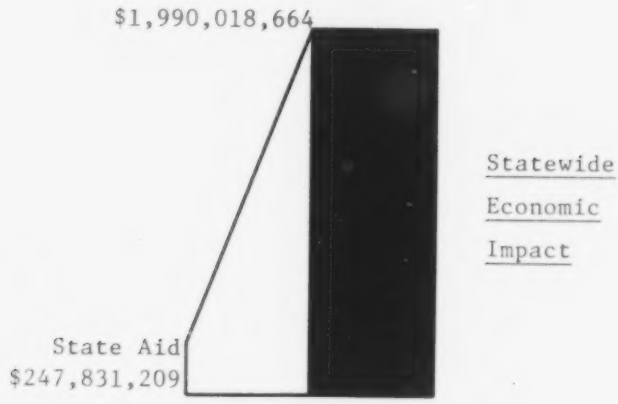


SUNY COMMUNITY COLLEGE REVENUES FOR 1989-90 $771,959,679

When a comparison of revenues ($771,959,679) is made to total economic impact ($1,990,018,664), the result is a finding that each dollar of total revenue has an economic impact of 2.6 to 1, comparable to the result of the previous study. The revenue share from student tuition has decreased 2.4%, sponsor aid decreased 1.6% and State aid decreased 1.0%. Out-of-state sources increased .5% and other State sources, 4.5%.

When comparing total economic impact to State aid revenue only, the relationship is a ratio of 8.03 to 1, as subsequently illustrated. This is .43 greater than the ratio of 7.6 found by the 1987 study.

RELATIONSHIP OF STATE AID TO TOTAL ECONOMIC IMPACT



Job Opportunities. The employment opportunities created by the existence of the community college system were estimated by using the multiplier of 30.6 for each million dollars of direct economic impact. Reflecting the current economy, this factor was 9.5 less than in the previous study. This resulted in an estimated 26,391 jobs created in New York State. When added to the 16,092 full-time equivalent jobs already existing in the colleges, the result is a total of 42,483 employment opportunities. Stated another way, more than 42,000 jobs across the State were attributable to SUNY's community colleges. This figure was approximately 1,000 greater than the 1987 findings even though the recommended multiplier decreased markedly (40.1 to 30.6).

Findings: Average Economic Impact on Sponsor Areas

The model was also used to estimate the economic impact of each SUNY community college (N=30) on its sponsor area. Calculations were performed as outlined in Appendix D. Of the total in-state direct expenditures by community colleges, their faculty and students, 50.1%, or almost $516 million, are spent within their respective sponsor areas.

Listed below are average expenditures within a community college sponsor area:

Average College Expenditures	$ 6,546,236
Average Student Expenditures	$16,031,257
Average Employee Expenditures	$ 5,548,387
AVERAGE DIRECT ECONOMIC IMPACT	$28,748,798

On average, nearly $29 million was spent by a community college, its employees and its students, within the sponsor areas, an $8.5 million increase since the last study. Of these average expenditures, student expenditures accounted for 57% of the economic impact on sponsor areas, college expenditures accounted for 23% and employee expenditures accounted for 20%. During the past three years, the percentage of the total accounted for by student expenditures decreased 6%, college expenditures increased by 4% and employee expenditures increased 2%.

A multiplier of 1.7 (based on information from the New York State Department of Economic Development) was applied to the total average direct impact in order to account for respending of the original expenditure.

AVERAGE TOTAL LOCAL ECONOMIC IMPACT

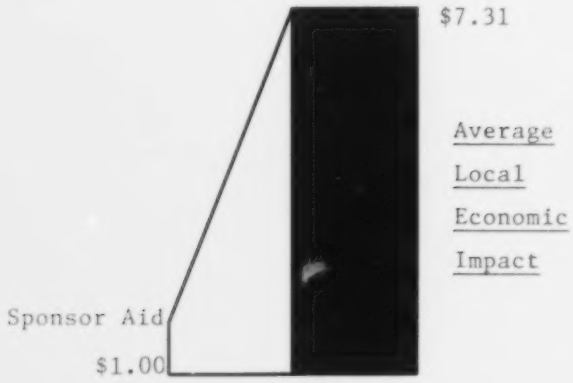
1.7 X $28,748,798 = $47,813,996

On average, a business volume of nearly $48 million was generated within a sponsor area by the expenditures of a community college, its employees and students. This reflects an $11 million increase since the previous study.

Sponsor Contributions. Sponsor contributions included local tax and chargeback revenues. Because of size and location, local sponsor contributions ranged from about $2.1 million to more than $36 million.

The average sponsor revenue was $3,830,961. On average, the ratio of each sponsor dollar to total economic impact was 1:7.31, ranging from $2.82 to $13.06, depending on number of variables associated with each college and service area.

RELATIONSHIP OF AVERAGE SPONSOR AID TO AVERAGE LOCAL ECONOMIC IMPACT



Job Opportunities. The existence and expenditures of a community college within a sponsor area results in the creation of new jobs as result of the economic activity. When the employment multiplier was applied to the average direct economic impact, the result was an estimate of 879.7 jobs created, on average, in each sponsor area. Each college, on average, had 536.4 existing full-time equivalent jobs. This resulted in a finding of average total employment opportunities attributable to the college of 1,416 jobs in each sponsor area. Stated another way, on average, for each existing job at a community college, 1.64 additional jobs were created within the community.

Summary

This project used the economic impact model previously used in the 1987 study to estimate the economic impact of State University of New York community colleges on the State and sponsor areas. Multipliers were adjusted based on advice from the New York State Department of

Economic Development and the U.S. Department of Commerce. Using 1989-90 data from each community college, calculations of each component of the model were performed resulting in the findings as shown below.

The SUNY community colleges generated an economic impact in New York State as follows:

- Almost $1 billion of the State's economy was a direct result of spending by SUNY's community colleges, their students and their employees.
- A business volume or economic impact of nearly $2 billion was generated by expenditures of SUNY's community colleges, their students and their employees.
- The ratio of total economic impact to total revenues from all sources was 2.6 to 1.
- The ratio of statewide economic impact to State aid was 8.03 to 1.
- More than 42,000 jobs were attributable to the existence and expenditures of SUNY's community colleges.

The impact on sponsor areas was:

- More than 50% of expenditures by community colleges, faculty and students were within their respective sponsor areas.
- Student expenditures accounted for 57%, college expenditures for 22% and employee expenditures for 21% of the direct economic impact.
- Nearly $29 million was spent by the "average" community college, its employees and students within the sponsor area.
- On average, a business volume of nearly $48 million was generated within a sponsor area by the expenditures of the college, its students and employees.
- On average, the ratio of total economic impact to each dollar of sponsor revenue was 7.31 to 1.
- On average, the existence of the college accounted for more than 1,400 jobs within each sponsor area of the community.

The findings of a ratio of economic impact to State aid of 8.03 to 1 was conservative compared to results of studies done in other states.[11] The differences were primarily caused by use of smaller multipliers and conservative estimates of components of employee

expenditures. Still the findings clearly demonstrated that the SUNY community colleges can be viewed as an economic entity, one that contributes to economic development much like other segments of the economy.

Readers must remember that the more important benefits, increased earning power associated with increased levels of education, and an improved quality of life, have not been included in this study. The investment in developing human capital provides the most important return to the citizens of the State. Making higher education and technical skill training readily available to all citizens of New York State remains the main job of the community colleges. That they also have a significant economic impact further reinforces the wisdom of public investment in this unique educational system.

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1) The Economic Impact of the SUNY Community Colleges on the State of New York. Two-Year College Development Center, University at Albany, February 1988. (Two reports: full report with appendices and a statistical report).

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3) Brookdale Community College. Handbook for Conducting A Study of the Economic Impact of A Community College. Lincroft, NJ: Office of Research and Development, 1983.

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10) Regional Multipliers: A User Handbook for the Regional Input-Output Modeling System. Washington, D.C.: U.S. Department of Commerce, Bureau of Economic Analysis, U.S. Government Printing Office, May 1989.

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APPENDIX A

UPDATE SURVEY: ECONOMIC IMPACT OF SUNY COMMUNITY COLLEGES

December 1990

In 1987, the Two Year College Development Center and State University of New York Office of Community Colleges undertook a study to determine the statewide and local economic impact of SUNY community colleges. Given the changes in the economy and fiscal climate within New York State over the past three years, we feel that an update of the economic impact is warranted.

The model used in the original effort (Ryan 1983) will also be used in this replication. Directions and suggestions are provided for each segment of information needed. 1989-90 data should be used as the information source.

We hope all community colleges will participate so that the results will have maximum utility. We plan to have the report completed by early March. In addition, each college will be provided with its local sponsor impact results if requested.

Please return the completed form by January 18, 1991 to:

Dr. Gene M. Winter, Director
Two-Year College Devleopment Center
University at Albany
135 Western Avenue, Husted 208
Albany, New York 12222

Thank you for your cooperation.

- -

College: _____

Sponsor County(ies): _____

Name/Title of Person Completing Survey: _____

_____

Phone Number: (___)_____

Information Requested	Directions/Source of Information
1. College expenditure: $_____	Includes total college expenditures for the fiscal year ending June 30, 1990, but <u>excludes</u> the following: a. all salaries paid to employees b. all internal transfers (that are not then expended externally) c. all taxes <u>Source</u>: Use 1989-90 fiscal year audit or Fiscal Year 1990 HEGIS Financial Report, line for "total current fund operating expenditures and mandatory transfers," <u>minus</u> exclusions listed above, and <u>plus</u> any expenditures for building projects, capital, acquisitions, etc.
2. Total Expenditures for Student Activities: $_____	Includes athletic expenditures and programs generated by fees, admissions and fund-raising activities of clubs and organizations. Source should be Student Activities Office.
3. Percentage of college expenditures spent: a. in sponsor area _____%	There are two methods of deriving this information from college business records: First, identify expenditures by addresses of vendors;
b. in New York State _____%	Then, either calculate actual total expenditures in a) county(ies) in the college's sponsor area; b) in New York State; and c) out-of-state for fiscal 1989-90; <u>OR</u>
c. out-of-state _____%	Examine three months of activity (in three different quarters) to determine average percentage spent in: a) sponsor area, b) in-State and c) out-of-state.

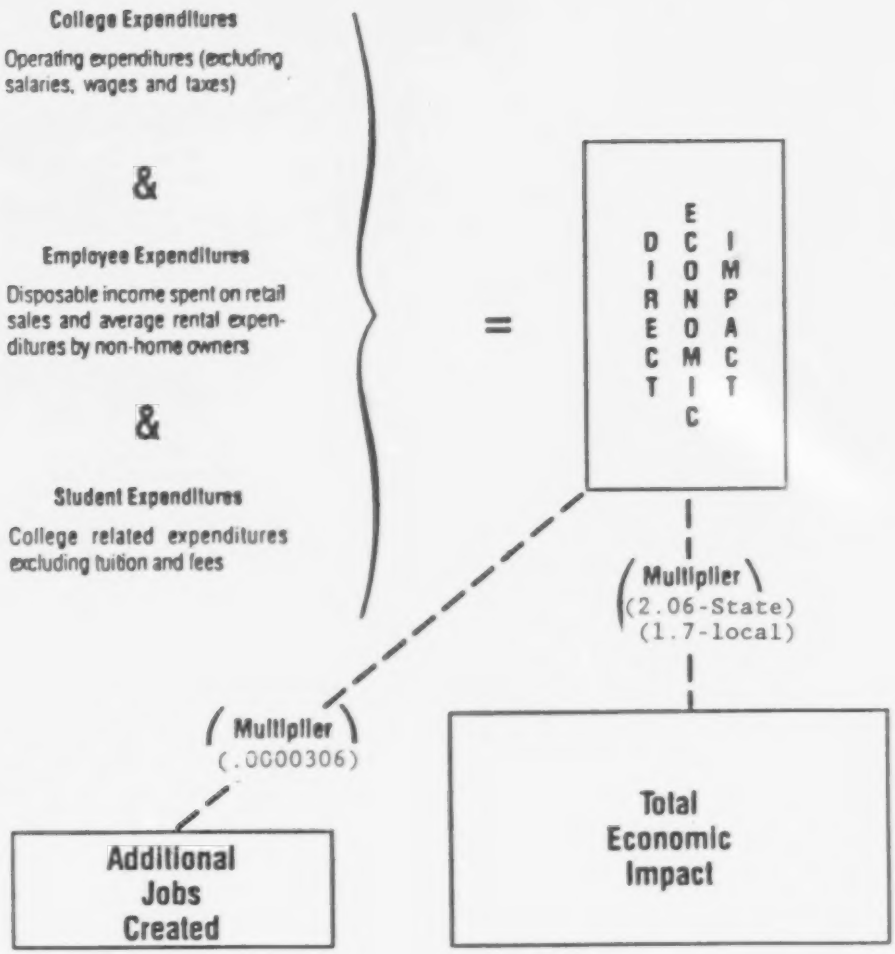
Information Requested	Directions/Source of Information
4. Number of college employees: a. full-time: _____ b. part-time: _____ c. TOTAL NUMBER: _____ d. FTE for above: _____	Use end of 1989 calendar year payroll records, W-2 submissions, or 1989-90 annual budget and data to determine all college employees during 1989. Include all employees, professional and non-professional.
5. College employees who live: in sponsor county(ies): a. full-time: _____ b. part-time: _____ c. TOTAL: _____ in New York State: a. full-time: _____ b. part-time: _____ c. TOTAL: _____	Use address information on payroll records or in college directory. If data on part-time employees are not available, assume the same percentage of part-time employees live in the county sponsor area, and in New York State as full-time employees do.
6. Total disposable income available to college employees $_____	Use appropriate college records to determine total money paid directly to all college employees, including payments/deductions for employee benefits but excluding a) all taxes withheld (i.e., city, state, federal, Social Security) and b) all mandatory retirement deductions.
7. Number of students: a. full-time: _____ b. part-time: _____ c. TOTAL: _____	This should be available on HEGIS forms, state reports and/or internal audits. Identify both full-time and part-time students defined as follows: a. full-time student: enrolled in 12 or more credit hours b. part-time students: enrolled for less than 12 credit hours

Information Requested	Directions/Source of Information
8. Average annual college-related expenditures by full-time students: $_____	Use financial aid schedules for the 1989-90 academic year to estimate nine-month living allowances and book costs for a single, dependent, full-time student living at home. Exclude cost of tuition and fees.
9. Average annual college-related expenditures by part-time students: $_____	Use the same financial aid schedule specified in #8 above to estimate the nine-month costs only for books, college-related supplies and transportation to and from classes for a part-time student (assume 6 credit hours). Exclude cost of tuition and fees.
10. Revenue from students: $_____ Revenue from sponsor: $_____ Chargeback revenue: $_____ State aid: $_____ Revenue from other sources within the State: $_____ Revenue from out-of-state sources: $_____	Available from appropriate 1989-90 college records.

Thank you for your cooperation.

APPENDIX B

Components of the Economic Impact Model



APPENDIX C

Employee Factor Reference Chart I

	A Non-housing In-County Estimates	B County Percentage Who Rent	C Estimated for 1990 - County Mean Rent
New York State		51.4%	$425
New York City:	35.6%	76.6%	432
Bronx	24.9%	85.4%	395
Kings	27.0%	76.6%	401
Manhattan	51.7%	92.2%	484
Queens	28.7%	61.9%	308
Richmond	34.7%	39.1%	464
Rest of State:		31.5%	403
Albany	71.4%	43.9%	379
Allegany	39.7%	25.5%	271
Broome	59.9%	34.6%	354
Cattaraugus	48.7%	26.4%	267
Cayuga	48.0%	28.9%	324
Chautauqua	51.2%	29.2%	306
Chemung	63.9%	30.5%	332
Chenango	46.5%	25.5%	312
Clinton	72.5%	36.6%	354

Column A - Total Retail Sales per County ÷ Effective Buying Income (or disposable income)
Source: S & MM/1990 Survey of Buying Power

Column B - Percent of Renter-Occupied Housing Units
Source: New York State Statistical Yearbook 1989-90

Column C - Average Rent per County - Estimated for 1990 from trend data found in:
Current Housing Reports #150-87, Annual Housing Survey, 1985 - Table 4-13 and 1987 Table 4-13; U.S. Department of Commerce - Bureau of Census; U.S. Department of Housing and Urban Development - Office of Policy Development and Research
Current Housing Reports #150-87; Annual Housing Survey: 1980 Part F; U.S. Department of Commerce - Bureau of Census; U.S. Department of Housing and Urban Development - Office of Policy Development and Research.

	A Non-housing In-county Estimates	B County Percentage Who Rent	C Estimated for 1990 - County Mean Rent
Columbia	45.4%	29.7%	$316
Cortland	71.3%	35.7%	332
Delaware	67.8%	25.9%	304
Dutchess	53.8%	33.5%	452
Erie	52.5%	37.4%	314
Essex	63.1%	25.6%	310
Franklin	61.2%	29.7%	394
Fulton	54.2%	28.3%	249
Genesee	58.2%	26.7%	356
Greene	58.8%	27.2%	320
Hamilton	51.7%	18.2%	249
Herkimer	49.7%	28.4%	249
Jefferson	82.9%	31.6%	306
Lewis	32.9%	19.7%	253
Livingston	48.4%	27.5%	348
Madison	48.1%	25.8%	332
Monroe	54.0%	36.7%	427
Montgomery	47.7%	33.1%	215
Nassau	51.1%	21.1%	634
Niagara	53.3%	31.2%	330
Oneida	57.8%	34.7%	304
Onondaga	59.4%	38.2%	364
Ontario	69.3%	26.9%	368
Orange	62.1%	34.3%	431

	A Non-housing In-county Estimates	B County Percentage Who Rent	C Estimated for 1990 - County Mean Rent
Orleans	30.3%	25.2%	$334
Oswego	41.0%	26.9%	342
Otsego	68.7%	28.9%	326
Putnam	34.2%	20.4%	569
Rensselaer	43.9%	36.8%	308
Rockland	35.4%	29.1%	597
St. Lawrence	62.9%	28.2%	302
Saratoga	53.6%	27.4%	368
Schenectady	53.0%	33.1%	344
Schoharie	45.7%	23.9%	322
Schuyler	45.6%	19.8%	312
Seneca	40.8%	24.5%	340
Steuben	53.6%	25.3%	312
Suffolk	51.4%	20.1%	601
Sullivan	57.1%	31.8%	365
Tioga	45.7%	20.3%	318
Tompkins	49.7%	44.8%	423
Ulster	58.4%	31.3%	399
Warren	79.8%	31.9%	334
Washington	45.0%	24.6%	298
Wayne	34.8%	23.4%	348
Westchester	41.6%	47.6%	541
Wyoming	42.9%	24.2%	310
Yates	42.9%	23.6%	310

CALCULATIONS OF ECONOMIC IMPACT - SPONSOR COUNTY(IES)

College: _____

Data Items	Procedures	Estimate
A. Student Activity expenditures spent in County	Found by applying percentage computed in #3a to total reported in #2 (on survey).	$_____
B. College expenditures spent in County	Found by applying percentage computed in #3a to total reported in #1 (on survey).	$_____
C. Total in-County expenditures by the College	Computed by adding A and B.	$_____
D. Employees non-housing expenditures	Obtained as follows: Disposable Income (#6 survey) X Percentage of in-County Staff (#5 survey) X Average Percentage of non-housing in-County expenditures (Column A - Chart I)	$_____
E. Expenditures of out-of-County full-time employees spent in-County on non-housing items	Obtained as follows: Total number of out-of-County Full-time employees X $1,000 / Part-time employees X $ 500 (#4 and 5 - survey)	$_____ / $_____
F. Rental Expenditures by full-time college staff living in County	Total full-time staff living in County X County percentage who rent (Column B - Chart I) X County Median Rent X 12 months (Column C - Chart I)	$_____
G. Total In-County employee expenditures	Computed as follows: D + E + F	$_____

Data Items	Procedures	Estimate
H. Total expenditures by full-time students	Computed by the following method: 7a X 8 (on survey)	$_____
I. Total expenditures by part-time students	Computed by the following method: 7b X 9 (on survey)	$_____
J. Total expenditures by students	Computed by adding H and I	$_____
K. Total initial economic impact of the College on the County	C + G + J	$_____
L. Multiplier Effect		1.7
M. Total Estimated Economic Impact	L X K	$_____
N. Full-time employees living in County	FTE (4d on survey)	_____
O. Total initial economic impact of the College in the County	K	$_____
P. Jobs related to the College	K X .0000306	_____
Q. Total full-time employment related to the College	N + P	_____
R. Ratio of sponsor contribution to total economic impact	M ÷ sponsor + chargeback revenues	_____

Adapted from: Handbook for Conducting A Study of the Economic Impact of A Community College, Brookdale Community College, Lincroft, New Jersey, 1983.

CALCULATIONS OF ECONOMIC IMPACT - STATE

Data Items	Procedures	Estimate
A. Student activity expenditures spent in State	Found by applying percentage computed in #3b to total reported in #2 (on survey).	$_____
B. College expenditures spent in State	Found by applying percentage computed in #3b to total reported in #1 (on survey).	$_____
C. Total in-State expenditures by College	Computed by adding A and B.	$_____
D. Employees non-housing expenditures	Obtained as follows: Disposable Income (#6 - Survey) X Percentage of in-State Staff (#5 - Survey) X Average percentage of non-housing expenditures by County (Use Column A, Chart I)	$_____
E. Expenditures of out-of-State full-time employees spent in County on non-housing items	Obtained as follows: Total number of out-of-State full-time employees X $1,000	$_____
Part-time	Total number of part-time out-of-State (#4 & 5 - Survey) X $ 500	$_____
F. Rental Expenditures by full-time college staff living in State	Computed as follows: Total full-time staff living in State X Percentage who rent (Use County % Column B - Chart I) X Median rent X 12 months (Use Column C - Chart I)	$_____
G. Total employee expenditures in State	Computed as follows: D + E + F	$_____

Data Items	Procedures	Estimate
H. Total student expenditures in State	Same figure as in-County; use Student Expenditures from J, Local Sponsor Calculation	$_____
I. Total direct economic impact of the College on the State	C + G + H	$_____
J. Multiplier Effect	Statewide multiplier - 2.06	2.06
K. Total Estimated Economic Impact	I X J	$_____
L. FTE living in State - (as reported in #4 on survey form)		_____
M. Jobs related to the College	I X .0000306	_____
N. Total full-time employment related to the College	L + M	_____

Adapted from: Handbook for Conducting A Study of the Economic Impact of A Community College, Brookdale Community College, Lincroft, New Jersey, 1983.

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